

Skepticism, epistemological fictionalism and the metaphysical claim that the brain is a virtual reality engine

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Abstract

The primary aim of this essay is to present and defend "virtualism" – essentially, the claim that the brain is a virtual reality engine, meaning that the world of experience is, literally, a virtual reality somehow computationally generated by the brain. The most challenging objection to this theory is that it undermines itself by having to admit its own virtuality, i.e., untruth. In preparing my defence against this, I introduce "epistemological fictionalism" as an attempt at establishing a first philosophy based on global skepticism, inspired in particular by the ancient skeptics and George Santayana. The entire first part of the essay's two parts deals with epistemological fictionalism, the problem of justifying belief in general, and my reply to the objection that virtualism is self-undermining. In the second part, virtualism is finally expounded, and a wide range of philosophical consequences are explored. In most of what I discuss here, I rely heavily on Antti Revonsuo and Thomas Metzinger.

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Introduction

The assumption that the brain works something like a computer has been at the core of cognitive science since its inception around the middle of the 20th century. It has shaped or reshaped a wide range of other fields of study, including psychology, neuroscience, evolutionary biology and, of course, AI research. What philosophers have contributed have mainly been arguments either for or against the claim that the mind can, in principle, be reduced to physical events in the brain¹. But completely inverse to this approach, there is a much more philosophically (as opposed to scientifically) significant perspective to be found, where mind rather than physical reality is granted primacy. The problem then shifts from the ability of physical stuff to produce mind to the ability of mental stuff to produce the appearance of physical stuff in experience – or rather, the appearance of the entire physical universe. This perspective is perfectly well supported by the computationalist assumption: If everything mental really is the computational product of biological mechanisms in the brain, then the world we experience and describe as a physical world wholly external to us must be considered, literally, a *virtual reality* – a model rendered somehow by mostly unconscious internal processes, based on sensory input. Presumably, this had the original evolutionary function of making it as easy as possible for organisms like ours to move about and find what they need to survive and reproduce, but the same capacity has given us fantastical byproducts, like dreams and free speculative thought. A wide variety of prominent scientists have pointed out this alternative perspective, or even relies directly on it in their research². But the task of exploring its ramifications and theoretical justification is generally seen as too speculative for empirical science, and is passed on to philosophers, exceedingly few of which have taken it up, at least not explicitly in terms of this analogy between mind and virtuality. I have found two major exceptions to this: the

1 For instance: John Searle, Daniel Dennett, David Chalmers, Hilary Putnam.

2 Scientists who have pointed it out include, in no particular order, the biologist Richard Dawkins (2000: chapter 11), the cognitive neuroscientist Antti Revonsuo (2006: chapter 6), the neuroscientist Rodolfo Llinás (2002), the neurologist and AI researcher Henry Markram (director of IBM's Blue Brain Project, which has the long term goal of building an artificial human brain using biologically realistic models of neurons) and the theoretical physicist David Deutsch (1998: chapter 5).

philosophically minded cognitive neuroscientist Antti Revonsuo and the philosopher Thomas Metzinger. These thinkers present, in great detail, exactly the kinds of general theories I would like to see, and even ones that very closely resemble the theory I will introduce in the second part of this essay as "virtualism". I rely heavily on them both in elaborating what I think this metaphysical position involves. But what neither of them provide is a thorough argument for how their theories escape logical contradiction. If it is the case that we can only experience virtual worlds – if nothing we can think or perceive can reach out from inside the virtual realm into a truly external reality – then any theory that states these things must necessarily itself be just another construct among constructs. More succinctly put, their theories and my own, all of which involve metaphysical claims, deny the possibility that any metaphysical claim can be true! This seems to be a blatant self-contradiction, and it is not clear how Metzinger and Revonsuo resolve this issue. The entire first part of this essay's two parts will be devoted to presenting my solution to this problem. In short, I will show that this particular contradiction is not an unacceptable one; rather, it is to be viewed as a welcome reminder about the limitations of speculative thought. This conclusion is made possible by a fundamental perspectival shift from epistemological realism (belief in the attainability of true knowledge) to epistemological *fictionalism* based on radical skepticism. What I hope will be arrived at by this route is a convincing theoretical foundation for speculative thought in general, on the basis of which the claim that virtualism is self-undermining can be rejected.

Much of the topic has been extensively traversed already much before the computationalist assumption was made possible by technological advance. In fact, the basic claims of virtualism, stripped of their computational terminology, constitute a recurrent theme in the history of philosophy since the Presocratics. When the focus has been on the negative conclusion that we cannot truly know anything beyond the realm of our own mental fabrication, it has been called skepticism. When the focus has been on the fabric, it has sometimes been called idealism or phenomenology. When the focus has been on the developmental origins of our capacity to create for ourselves a coherent and meaningful world, it has been called genetic constructivism. And so on. In my opinion, these traditions should not be construed as separate, but as aspects of one and the same major topic running through the entire history of philosophy – or at least as attempts which in retrospect can rightly be understood as

being in the same vein. For this reason, I will make almost indiscriminate use of both historical sources and ones that explicitly make use of the computationalist assumption.

In the first part of the essay, I will introduce epistemological fictionalism and argue that it is a viable first philosophy. I will explain how it relates to skepticism and virtualism, and discuss the consequences of relinquishing truth as a criterion for the acceptance or rejection of thoughts and perceptions. How to justify belief in general becomes a major problem, and I will offer my reflections on this issue.

In the second part, I will give a more comprehensive presentation of virtualism and its philosophical consequences. The core issues will be introduced in terms of the dreaming brain as a model system for the study of consciousness. A useful distinction between real and virtual truth will be established, and I will suggest that the confusion of these two concepts of truth is the pivotal reason for the realist mistake. Another major topic will be the nature of the virtual self and our concept of transcendental subjectivity. Finally, I explore a few possible consequences of the virtualist perspective at a further speculative distance, for how we should think of fictionalist religion, culture in general, and the future of humanity.

Part I: Epistemological fictionalism

In modern philosophy, before the upheavals of the 20th Century, the definition of truth as correspondence to reality was generally seen as self-evident. But it was far from unproblematic, the main worry being that it led to skepticism. As Berkeley expressed it in his *Principles of Human Knowledge*:

we have been led into very dangerous errors, by supposing a twofold existence of the objects of sense, the one intelligible or in the mind, the other real and without the mind, whereby unthinking things are thought to have a natural subsistence of their own, distinct from being perceived by spirits. This which, if I mistake not, has been shown to be a most groundless and absurd notion, is the very root of scepticism. For so long as men thought that real things subsisted without the mind, and that their knowledge was only so far forth real as it was conformable to real things, it follows, they could not be certain that they had any real knowledge at all. For how can it be known that the things, which are perceived, are conformable to those which are not perceived or exist without the mind? (2008: 117)

Skepticism was to Berkeley an absolutely intolerable result, and the only way he could see to avoid it was to eliminate from the equation the conventional assumption that matter exists independently of mind – this was the starting point of his infamous “immaterialism”.

Kant saw himself forced by the same problem to develop his own radical and counterintuitive solution. As expressed in one of his last published books, *Introduction to Logic*:

Truth is said to consist in the agreement of knowledge with the object. According to this mere verbal definition, then, my knowledge, in order to be true, must agree with the object. Now, I can only compare the object with my knowledge by this means, namely, by taking knowledge of it. My knowledge, then, is to be verified by itself, which is far from being sufficient for truth. For as the object is external to me, and the knowledge is in me, I can only judge whether my knowledge of the object agrees with my knowledge of the object. (1972: 40)

Kant acknowledged that the skeptics were right about our inability to reach beyond mere appearances, but only because he saw that the realm of appearances was far

from as cognitively barren as its bad philosophical reputation would have it. In fact, what he found was that the sought-for final, objective, communicable, and yet undogmatic determination of empirical objects *could only be arrived at here*. For even though appearances are all we can experience, the very possibility of experience has, according to Kant, certain a priori, necessary and objective formal conditions, on the basis of which a stable empirical reality that can be the object of scientific inquiry can be established. Hence, what Kant attempts to do, in his *Critique of Pure Reason*, is to map out the a priori determinable absolute borders of this merely empirical domain – and by that lay the foundation for both philosophical and empirical thought in general.

The philosophical constructions of both Berkeley and Kant thus begin with their attempts to evade or mitigate the skeptical consequence that follows from reflection on the definition of truth as correspondence to reality. But neither of their solutions is satisfying. A different approach is needed in first philosophy, and, as I will argue in this part, that approach can and should be *based* on radical skepticism. Before I get to that, however, I'd like to briefly explain why I think the philosophical projects of Berkeley and Kant both fail. These reasons will, in turn, lead straight into the issues that need to be addressed by my epistemologically fictionalist alternative.

Where the alternative solutions are flawed

First, a few words against a crucial point in Berkeley's radical idealism: Contrary to what Berkeley assumes, the belief in a reality external to mind and perception, material or not, can be perfectly well justified despite the impossibility of verifying the truth of this belief, simply by appealing to a different criterion for belief than truth. The belief would then have to be qualified as merely *hypothetical*, and any metaphysical theory that involves it would simply inherit this status. Hypothetical metaphysics is not a contradiction in terms: The limits of verification are not the limits of metaphysics. In fact, as I will argue, metaphysics is and must be *inherently speculative*.

Where epistemological fictionalism departs from Kant is in the strict necessity and epistemic finality he claims of the a priori conditions of experience. Against this, the

fictionalist holds that all structural elements of our experience must be considered fundamentally arbitrary – something that is best illustrated by the following plausible naturalist explanation: what *seems* to be an unbreakable epistemic order is an illusion caused by circumstantial adaptational optimization of the way our brain generates an experiential world. This internally constructed order, the epistemological fictionalist holds, can (at least in principle) be circumvented or further improved at every point. The empirical reality that Kant operated with was simply not as fixed as he asserted. It turned out to be just a model, and is no longer a particularly useful one: With modern physics, the absolute limits he determined for this empirical reality have long since been transgressed; new models concerning the nature of time, space, causality, substance and so on have rendered his framework obsolete. And although there might be a case to be made that his description of empirical reality has some purchase on our unreflected experience or intuitive understanding of reality, resorting to that would greatly diminish the philosophical significance of his system, to such an extent that it would be mostly irrelevant to any epistemology that aims at serving the function of first philosophy. I personally do not think that such a case can be convincingly made, but arguing the point would be to digress from the issue at hand.

Many later philosophers have opted to abandon correspondence theory altogether to evade the problem of skepticism. But this seems to me deeply unphilosophical. Even though correspondence is an arbitrary, "merely verbal" definition of truth, it is a profound one, and should not be shunned for the sake of comfort. That said, skepticism is not anywhere near as destructive and uncomfortable as it is generally regarded. As demonstrated by among others Ernst von Glasersfeld (2002) and George Santayana (1955), skepticism is only a dead end to thinkers with realist assumptions or expectations. To an epistemological fictionalist on the other hand³, it is *the only legitimate starting point for philosophy*, and even a superabundantly fertile one:

a mind enlightened by scepticism and cured of noisy dogma, a mind discounting all reports, and free from all tormenting anxiety about its own fortunes or existence, finds in the wilderness of essence [here equivalent to

3 "Epistemological fictionalism" is a term of my own invention, hence none of the thinkers I draw on could have explicitly approved of it. As for von Glasersfeld and Santayana, I believe they would both object to the term, but not for reasons that go much deeper than terminological preferences.

what I call fiction] a very sweet and marvellous solitude. The ultimate reaches of doubt and renunciation open out for it, by an easy transition, into fields of endless variety and peace, as if through the gorges of death it had passed into a paradise where all things are crystallised into the image of themselves, and have lost their urgency and their venom. (Santayana, 1955: 76)

Skepticism

If we take skepticism seriously, we cannot truthfully postulate the real existence of anything. This is where the realist sees a risk of falling into abysmal nihilism. But is it really necessary to secure our cognitive arrival at real existence? Supposing skepticism is true, we can still operate with the full depth of experience and thought. We can still seek and find explanatory patterns in our experience, and postulate the existence not only of reality as such, but of specific objects and events with specific attributes. However, all such postulation will have to be qualified as speculative. This is where the term "fiction" comes in. A fiction is something supposed not to be true, but which one nevertheless can invest belief in, as an act of *immersion*.

Parmenides said, "one cannot think of what is not"; – we are at the other extreme, and say "what can be thought of must certainly be a fiction." (Nietzsche, 1968: 291)

This use of the term fiction has no direct historical precedence. The Kant scholar Hans Vaihinger comes closest, where he in his *Philosophy of As-If* restores fictions to dignity across the cultural spectrum, from hard science to religion. But he understands them in a more conventional sense, and contrasts them with "hypotheses", which, although he defines them as "ideational constructs", clearly have a realist hope attached:

[A hypothesis] submits its reality to the test and demands verification, i.e. it wants to be proved true, real, and an expression of a reality. Every hypothesis without exception endeavours to establish a reality, and even though we are still uncertain as to the actual occurrence of something hypothetically assumed, we yet entertain the hope that the assumption will eventually prove to be true. (2009: 85)

In skeptically based epistemological fictionalism this realist hope is denied, and accordingly there is no longer any reason to distinguish between fictions and

hypotheses. In my use, these terms are interchangeable. Scientific hypotheses are viewed as merely one particular sort of fictional constructs.

In Greek antiquity, although the term fiction had no verbal equivalent (Ferrari, 1989: 98), there emerged a view that very much resembles what I call epistemological fictionalism, in the two closely related skeptical traditions now referred to as Pyrrhonism and Academic skepticism. The latter, which emerged in Plato's Academy a century after Plato, grew out of doubts about the Stoics' claim that the absolute truth of being was graspable by the sage. Arcesilaus, the sixth scholarch of the Academy and the one that instituted skepticism, seems to have been exclusively focused on its negative moment. The story of his successorship is one of gradual development of a positive epistemology as well, until Philo of Larissa effectively ended the tradition one and a half century later by having the Academy relapse into dogmatism. The step in this positive development that most resembles epistemological fictionalism is the one introduced by Carneades, the Academy's tenth scholarch, who was later categorized by Sextus Empiricus as the founder of its Third era⁴. What he contributed was the introduction of *pithanon* as an acceptable criterion for belief, a term Cicero later mistranslated into Latin as "probabile", causing Carneadean epistemology to be called probabilist. But "what the word normally means in Greek is 'persuasive' or 'convincing,' and Carneades defined a *pithane* impression as one which appears true" (Burnyeat, 1983: 123). In other words, Carneadean epistemology was not probabilist at all. A more fitting term for it, at least in my view, is *fictionalist* epistemology.

In the problematic criterion of *pithanon* and the misunderstandings that surrounded it, we have a curious foreshadowing of both the central message of epistemological fictionalism and the difficulties met in trying to convey it. I will explore these issues through simultaneously defending Carneadean skepticism and my own epistemological fictionalism against three major objections raised against the former since antiquity, and expected to be raised in the reader's mind against the latter as well:

4 Diogenes Laërtius and Cicero had different suggestions for how to categorize the Academy's history, both of whom incidentally placed Carneades in what they called the New Academy.

1. The *apraxia* objection: that if skepticism were taken seriously, that is, if all truth judgments were withheld, it would render people unable to carry on with their daily lives.
2. The objection that skepticism is incoherent or self-contradictory, since the claim that nothing can be known itself seems to be a knowledge claim.
3. The objection that skepticism leads to solipsism – supposedly a *reductio ad absurdum* argument.

The *apraxia* objection

That Carneadean skepticism is unaffected by the first objection is already evident: even though he denies the possibility of true knowledge, he can nevertheless assent to claims on the basis of their apparent plausibility. He suffers no more difficulty living than a Stoic does. The main reason I think the *apraxia* objection is still so influential is that the nihilist caricature of skepticism is such a wonderfully extreme position, tempting to set up as a straw man position to distance oneself from. David Hume, for example, when presenting the *apraxia* objection in his *Enquiry concerning Human Understanding*, gives a very influential caricature of Pyrrhonism. And even though Carneadean skepticism is our main concern here, this does deserve a few remarks. Hume's words:

a Pyrrhonian cannot expect, that his philosophy will have any constant influence on the mind: Or if it had, that its influence would be beneficial to society. On the contrary, he must acknowledge, if he will acknowledge anything, that all human life must perish, were his principles universally and steadily to prevail. All discourse, all action would immediately cease; and men remain in a total lethargy, till the necessities of nature, unsatisfied, put an end to their miserable existence. (2007: 140)

In his essay "Can the Skeptic Live His Skepticism", Myles Burnyeat questions Hume's portrayal of Pyrrhonism, and concludes that the Pyrrhonian skeptic can indeed live his skepticism faithfully, because the only thing denied to him is what I have called *realist* belief:

When the skeptic doubts that anything is true, he has exclusively in view claims as to real existence. Statements which merely record how things appear

are not in question – they are not called true or false – only statements which say that things are thus and so in reality. (Burnyeat, 1983: 121)

And although the Pyrrhonian skeptic would not assent to anything beyond the phenomenally given, something Carneades arguably would, such a strictly phenomenalist ground is sufficient for the Pyrrhonian to avoid starving to death for doubting his hunger, or equivalent scenarios.

Hume's vilification of Pyrrhonism is polemically justified: he needs to set up an absurdly extreme position as a contrast to the kind of skepticism he aligns himself with, namely a Ciceronian version of Academic skepticism. But really, the two traditions in question were very similar. In fact, the only line that can uncontroversially be drawn between the two traditions in general is that while all skeptics are "concerned to show that the sceptical life is viable, the Academics never promise that it will be tranquil, whereas the Pyrrhonists do" (Thorsrud, 2009: 14).

The claim that skepticism is self-contradictory

The second objection, that skepticism is logically incoherent, is more challenging. Quotes such as the following one from Cicero's *Academica*, makes it look plainly indefensible:

I [the character Catulus] return to the position of my father, which he said to be that of Carneades; I believe that nothing can be known, but I also believe that the wise man will give assent, i.e. will have opinions, but this in such a way that he is aware that he is only opining and that he knows that there is nothing which can be comprehended and known; hence I approve of this kind of withholding assent in all matters, but I vehemently assent to this other view that there is nothing which can be known. (Frede, 1987: 212-3)

It is not immediately clear how the skeptic can consistently assent to the claim that nothing can be known. If the claim is true, it cannot be known, and if it can be known, it cannot be true. Either way, it seems, we have no reason to assent to it.

Most of the arguments put forth by the ancient skeptics were empirical, inherently unable to raise their conclusion to the status of knowledge. The only really strong argument they have is the logical argument that correspondence with reality is in

principle impossible to verify: If there is such a thing as an external reality beyond appearances, gaining knowledge of it can indeed be ruled out. As Xenophanes puts it, two hundred years before Pyrrho:

Certain truth [about God or the world] has not and cannot be attained by any man; for even if he should fully succeed in saying what is true, he himself could not know that it was so. (quoted in Glasersfeld, 2002: 26)

Knowledge is thereby shown to be impossible simply by its definition in terms of correspondence – but this definition involves an unverifiable assumption, namely that there even is such a thing as an external reality in the first place. What this means is that the claim that knowledge is impossible cannot consistently be held as fundamental in skepticism. The fundamental level would have to become one of *radical agnosticism*, where judgment is suspended even with regard to the existence of an external world, and hence, the question of the possibility of knowledge becomes meaningless. Its denial can only enter the picture together with the postulation of an external reality – the claim rests on a fiction, and must thus itself be understood in epistemologically fictionalist terms, that is, as a claim we can entertain, but never actually believe is true. Claiming to *know* that nothing can be known is dogmatic skepticism. The fictionalist only maintains that this claim is plausible or helpful in epistemological analysis, given that its speculative assumptions are correct. In other words, the claim is skeptically inspired *speculative metaphysics*, not an expression of skepticism itself.

The solipsism objection

The third objection, that skepticism leads to solipsism, only works if the solipsism it leads to is of an *ontic* kind, where assumptions about what may or may not lie outside one's individual sphere of appearances are strictly forbidden. Most intolerable of all, perhaps, is the denial that other persons really exist beyond their phenomenal manifestations to the solipsist subject. They are claimed to be no more than depthless characters in the solipsist's dream. But such ontological commitments are entirely contrary to skepticism! Skepticism cannot lead to ontic solipsism – the only kind of solipsism it leads to is of an *epistemic* kind. This kind of solipsism is no more than an acknowledgement that nothing beyond our individual spheres of

experience can truly be known to us, given the correspondence definition of truth. As Erwin Schrödinger puts it: "every man's world picture is and always remains a construct of his own mind and cannot be proved to have any other existence" (1958: 44). But unverifiability is no obstacle to speculation, and skepticism in no way prohibits speculative thought, as long as the thinker is careful not to mistake his thoughts for reality. *Epistemic* solipsism is entirely neutral to the question of how it should guide our beliefs and our course of action, and presents no reason to reject skepticism.

If the skeptic chooses to entertain the position of ontic solipsism *fictionalistically*, he is of course free to do so. But that would not involve the kind of realist commitment required for solipsism to be a *reductio ad absurdum* argument against skepticism.

Skepticism taken to its extreme

It is possible to discount even memory and logic, leaving us without belief in the reality of time or of the order inherent in appearances. This is arguably the most extreme skepticism humanly possible, since brute experiencing seems to be beyond our capacity for voluntary suspension. As long as we are alive and conscious, we seem to be unable to stop the world of appearances at the door – and the content of this world can be abundantly rich, full of apparent order: The world still appears temporal even if we suspend belief in the reality of time. Space still seems three-dimensional, objects present themselves to us as unitary, extended, colored and so on. Reality be what it may, our world of appearances is as rich as it was prior to skepticism, missing only our realist interpretation of it and exclusionary immersion in it. If the skeptic actively introduces new appearances by reflection, or change what already appears by the same method, these new appearances simply join with the rest, unassented to but nevertheless present. As already discussed, our conception of a mind-independent world is this kind of appearance. When the skeptic suspends judgment as to whether or not it really exists, it can still be present to him as an *idea*, in such a way that the only thing that separates his idea of a mind-independent world from the realist's idea of the same thing is the *attitude* the two thinkers have in thinking about it.

One does not have to strip an experience down to its most direct sensory components in order to find that which one cannot doubt. The full experience, complete with a cognitive identification of what is sensed, is beyond doubt *as appearance*. When the skeptic looks at the ocean, he does not see an unidentified blue patch in his field of vision, he sees what appears to him to be an *ocean*, and his mind summons all sorts of associations to this experience, just as a realist's mind would do. The "privileged access" some empiricists claim we have to raw, unreflected sense data in fact extends to the full width and depth of experience. There are good reasons to abstract away from experience what seems to be interpretative layers to find something that can plausibly be said to be elemental sensory information, for instance in trying to establish reliable invariants in experience that can be used in scientific reasoning. But this has nothing to do with the extent of conscious access to appearances.

A total suspension of belief in the reality of any possible appearance is thus not an impoverishment of experience at all – in fact, the effect of skepticism, far from being one of restriction, is a mind-boggling liberation of thought:

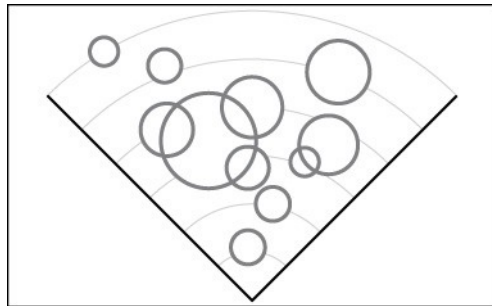
The Indians, in asserting the non-existence of every term in possible experience, not only free the spirit from idolatry, but free the realm of spirit (which is that of intuition) from limitation; because if nothing that appears exists, anything may appear without the labour and expense of existing; and fancy is invited to range innocently – fancies not murdering other fancies as an existence must murder other existences. While life lasts, the field is thus cleared for innocent poetry and infinite hypothesis, without suffering the judgement to be deceived nor the heart enslaved. (Santayana, 1955: 53)

But of course, this freedom is more than a little problematic. The problem of justification is a pressing example; this is the first topic I will discuss in the next chapter.

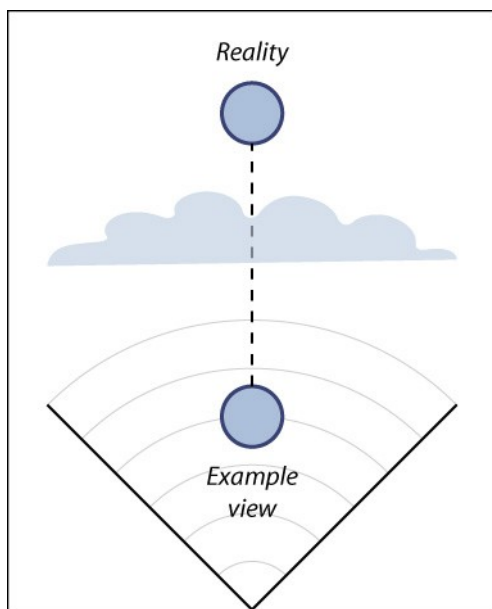
Fictionalist belief

Having taken skepticism to its final consequence, we have found a new, epistemologically fictionalist way to begin in philosophy. This chapter will be devoted to exploring what this attitude involves, how fictionalist belief in general can be justified, and how epistemological fictionalism relates to virtualism. These issues

are quite difficult to convey using words alone, so I have attempted to illustrate them with diagrams.

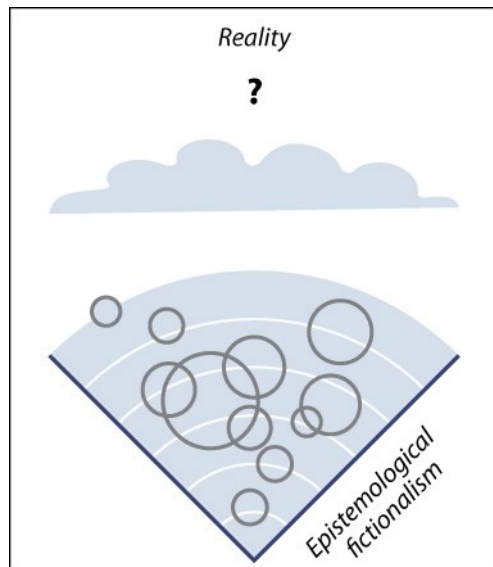


This shape is meant to represent the entire realm of possible mental construction, both conceptual and perceptual. Constructions at higher levels are more speculative, requiring more permissiveness of judgment to accept. At lower levels, constructions are stricter, judgment more skeptical. The strictly negative moment of radical skepticism is to be thought of as an extensionless point at the very bottom. The circles I have drawn in represent all the different possible views one can take, whether scientific, metaphysical, mystical or naive. All of them can find their place and scope within this realm. The shapes, sizes and positions of the nameless views pictured are determined merely for design purposes. A serious attempt to accurately represent their extensions would render them invisible. Even the totality of all views ever held in the history of human culture would only be microscopically represented in the diagram. The realm of possible construction is unfathomably vast.



Pictured here is an epistemological realist's claim of having arrived at truth, where truth is defined as correspondence with reality, and reality is understood as transcendent to the realm of mental construction. This radical realist claims to know that his view of reality is true in virtue of its correspondence with reality itself.

As discussed, the skeptic argues that any such knowledge claims are unjustified. If the epistemological realist were to *accept* this skeptical argument but remain an epistemological realist, he would find himself in nihilism – believing that it is pointless to exercise our cognitive capacity, or perhaps even that an empty nothingness is somehow the truth about reality. And given that realism is our default



position by human instinct, it is no wonder skepticism has such a bad reputation. But as I have argued, even though the skeptic denies the possibility of true knowledge and therefore assumes that all positive views are basically untrue or fictional, truth is not a necessary ingredient in the justification of belief. It is possible to believe fictionalistically. But what reasons can the fictionalist point to for his beliefs? What criterion can we employ for the adoption or rejection of fictionalist views? What criteria *should* we employ?

The problem of justification

The way most philosophers attempt to resolve the problem of justification is exclusionary and usually assumes that empiricist beliefs are the only kind of beliefs that can or need be justified. The problem is framed as being about how the "evidence of the senses" can give rise to justified belief, and thus most solutions proposed only justifies the kind of belief involved in empirical science, or empirical thinking on a more commonsensical level, to the exclusion of other kinds of belief. This is true even for Carneades, whose plausibility criterion is basically one of naive empiricism. One particularly interesting different approach is that of George Santayana, partly due to the fact that his starting point is very close to that of epistemological fictionalism:

All essences [i.e., possible constructions] and combinations of essences are brother-shapes in an eternal landscape; and the more I range in that wilderness, the less reason I find for stopping at anything, or for following any particular path. Willingly or regretfully, if I wish to live, I must rouse myself from this open-eyed trance into which utter scepticism has thrown me. I must allow subterranean forces within me to burst forth and to shatter that vision. I must consent to be an animal or a child, and to chase the fragments as if they were things of moment. But which fragment, and rolling in what direction? I am resigned to being a dogmatist; but at what point shall my dogmatism begin, and by what first solicitation of nature? (1955: 111)

Santayana appeals to an instinctive impulse he calls "animal faith" to ground his belief system, by postulating "substance", which in his terminology means "the assumption that there are things and events prior to the discovery of them and independent of this discovery". This postulate, Santayana argues, "underlies all natural knowledge". And therefore, the Berkeleian objection that these things are transcendent to human experience "may be dismissed at once as vain and sophistical; for it rescinds that animal faith, or that common sense, which is the beginning of art and of science and their perpetual presupposition" (1955: 186). This solution, although profound, is still exclusionary, and as Santayana admits, it is strictly speaking irrational and arbitrary:

Belief in substance, taken transcendently, as a critic of knowledge must take it, is the most irrational, animal, and primitive of beliefs; it is the voice of hunger. But when, as I must, I have yielded to this presumption, and proceeded to explore the world, I shall find in its constitution the most beautiful justification for my initial faith, and the proof of its secret rationality. This corroboration will not have any logical force, since it will be only pragmatic, based on begging the question, and perhaps only a bribe offered by fortune to confirm my illusions. The force of the corroboration will be merely moral, showing me how appropriate and harmonious with the nature of things such a belief was on my part. (1955: 190-1)

A stricter approach to justification than this cannot be exclusionary. It will have to be pluralist: we cannot suppose there to be a single universal ground for belief or a single privileged criterion. In fact, from the epistemologically fictionalist point of view, we have no reason to exclude *any* criteria from being employed – such an exclusion would demand a higher order criterion, and we have no way of finding an absolute, objective grounding for such a criterion.

The question of justification is, as Santayana suggests, a *normative* question, and since epistemology is incapable of providing us with normative guidelines, we have to start from a position open to making use of *any* criteria. This blank justificatory cheque is, however, not an argument that all criteria are equally *good*, because even to assert this radical relativism would be to take a normative position.

Intuitively, some views result in beliefs that can only be characterized as insane; ones that would make our lives unlivable. Others bury our minds in endless detail or silly

fantasy, and are clearly hindrances rather than help. But implicit in these intuitively obvious rejections of certain beliefs are exactly the kind of normative criteria we have no absolute warrant for asserting. It seems that in this question, like in the question of the existence of an external reality, the skeptic has to suspend all realist judgment, but nevertheless go on to exert fictionalist judgment in some minimal, philosophically careful way. We can assume that reality exists, if we are aware that this is merely an assumption. Similarly, we can assume at the start of the present investigation into justification that it is rational to judge views based on their being *expedient to simple purposes*. Relative to any particular purpose, the advantages and disadvantages of the different possible criteria for belief can be estimated. For instance, if we set ourselves the goal of making theoretical sense of experience, criteria like those found in the (still evolving) scientific method have proven to be incredibly well suited, as can be judged by the outstanding track record of the predictions made by the models produced by empirical science. No known criteria can match this remarkable expediency relative to this particular purpose. On the other hand, if our goal is something else entirely, for instance to encourage the feeling of being at home in the world, or having a meaningful role in a world narrative, the scientific method is patently inferior to criteria that would produce views we would call religious.

But even given the assumption that our views should be expedient to simple purposes, the core of the original difficulties still remain: they have merely been passed on to the question of *what purposes* we should set ourselves – to determine this we still need to appeal to a normative criterion of some sort. Ultimately, we have to appeal to individual intuition, but just leaving it at that would be rather unhelpful. The best way to proceed seems to me to be anthropological: to infer from the major areas of human culture to the purposes that are or have been important in our history. All manners of justification are inherently arbitrary; what an analysis of our cultural history can help us single out are what problems living and functioning human beings have sought solutions to, what purposes human life typically operates with – either explicitly or, as is far more often the case, implicitly. In lack of normatively neutral theoretical reasons, this anthropological method can at least give us *practical* reasons to investigate a manageable set of purposes, and to critique the examples of belief systems human culture has produced in order to accomplish these basic aims. A satisfactory analysis of this kind would have to be very extensive, as

well as very speculative, and falls well outside the scope of this essay. But a few relatively uncontroversial examples will be useful. I will assume that science and religion are products of ineradicably basic human needs. Although I will have to suggest concrete definitions of what it is they aim to achieve, these should not be taken as attempts at legislating for either cultural project. I simply provide my own thoughts on what their purposes are, or, in the case of religion, what its purposes should be. Even if my definitions seem to the reader to be wrongheaded, I think my analysis can have some value, if only in making the general case for compartmentalism.

As I will show, virtualism can at least partly be justified without making any assumptions, i.e., purely on the basis of epistemological fictionalism. But before I get to that, I will expand on the topic of fictionalist belief, and discuss science, religion, and the possibility for their compatibility.

Fictionalist immersion

A fictionalist can with good philosophical conscience believe in a way that is almost identical to realist belief. Constructions can be given the stamp of theoretical approval as long as the fictionalist maintains, in the back of his mind, the *as-if* qualification to his beliefs. With the same reservation, even the full feeling of immersion in fictional worlds can be emulated. But whereas the realist is fooled by the reality illusion he enters into, the fictionalist maintains an awareness of the questionable nature of what presents itself as reality, however convincing this presentation may be. His immersion is *lucid*. Where the realist *actually* mistakes his construction for reality, the fictionalist makes merely instrumental use of this same mental operation – as a means to ends, such as to avoid getting distracted by epistemological misgivings. A radically skeptical scientist, for instance, can use belief and immersion in the theories he is working on as a technique to focus his attention and make it easier to spot anomalies that challenges him to tweak the theories further, or to find practical applications for them. In general, scientific progress seems to be furthered by chasing the dream of truth, but this both can and should be done lucidly, i.e., with awareness that it is in fact a dream.

As another important example, a radical skeptic can certainly entertain naive realism in his practical life – in fact he would find it difficult to avoid, as the world thus conceived is by far the least laborious and most streamlined interface for simple everyday thought and action. Working *with* the mind's natural inclination rather than against it, the fictionalist uses realism as a practically indispensable tool. To foreshadow later discussions: "The conscious brain is a biological machine – a reality engine – that purports to tell us what exists and what doesn't" (Metzinger, 2009: 20). A skeptic that tries to do without this basic function will find himself incapacitated. In the words of Goethe, as paraphrased by Nietzsche in one of his *Untimely Meditations*: "whoever destroys illusions in himself and others is punished by the sternest tyrant, nature" (2010, section 7). This insight is essential to fictionalism.

The falseness of a judgment is for us not necessarily an objection to a judgment; in this respect our new language may sound strangest. The question is to what extent it is life-promoting, life-preserving, species-preserving, perhaps even species-cultivating. And we are fundamentally inclined to claim that the falsest judgments (which include the synthetic judgments *a priori*) are the most indispensable for us; that without accepting the fictions of logic, without measuring reality [by which he probably means experiential reality rather than ontic] against the purely invented world of the unconditional and self-identical, without a constant falsification of the world by means of numbers, man could not live – that renouncing false judgments would mean renouncing life and a denial of life. (Nietzsche, 1989: 11-12)

The fact that fictionalism not only allows but encourages *as-if* realism, introduces terminological difficulties, as the term "realism" has hitherto in the discussion been primarily associated with the opposite of fictionalism, namely epistemological realism. But even this term becomes ambiguous, as the fictionalist can emulate everything, even its negative image. To make myself clear, I will therefore make use of the more unambiguous term *anti-fictionalism* where needed. But for the most part, the discussion from here on will presuppose epistemological fictionalism, and most talk of realism will be understood in the fictionalist sense unless explicitly specified. Talk of truth and ontology, on the other hand, is more burdened with anti-fictionalist connotations, and will require more carefulness, even though the fictionalist has no difficulty appropriating these terms as well.

Fictionalist immersion is not entirely unproblematic. Believing and disbelieving at the same time creates a tension that can be hard to maintain; one's mental state tends to gravitate to either side. The only way to immerse oneself without this internal conflict is to forget for a moment one's skeptical reservations. As long as they can be retrieved when needed, for instance when confronted with epistemological questions, this temporary forgetting is entirely in keeping with skepticism.

A model for fictionalist immersion is the absorbed state of mind met in aesthetic appreciation, in particular in connection with world presenting media, like literary or cinematic fiction. No sane person would be unable to exit such states of immersion, however realistic, natural and *true* the fictional world seems in this state. Epistemological fictionalism simply applies this attitude universally, even to immersion in the worlds presented to us in waking sensory experience or scientific reflection on empirical data.

Nietzsche suggests that metaphysics should be viewed as "the legitimate play of grown-ups" (Vaihinger, 2009: 346, footnote 1) rather than as having anything to do with truth. This is certainly consonant with epistemological fictionalism, but the latter generalizes the point, claiming that *all* our worldmaking projects should be viewed in this way, as merely legitimate play with useful fiction.

A consequence of this is that the fictionalist is epistemologically pluralist. There is no reason we should restrict our attention, belief and immersion to just a single world. The logical principle of contradiction, far from being fundamental, is just another fictionalist tool. It is certainly useful *within* most world conceptions, but not across possible worlds defined in terms of separate purposes. The fictionalist has to be open to compartmentalism – if, that is, he finds *use* for more than one world conception.

Fictionalist science and religion

It is often claimed by critics of epistemological realism (i.e., anti-fictionalism) that scientists, and in particular physicists, believe themselves on a quest to find truth, or even believe themselves to be in possession of it to some extent. In other words, they are claimed to be realist. But this is no longer the case. Modern physics is

"epistemologically 'agnostic' " (Schwegler, 2001: 6). Scientists see themselves as simply tweaking conjectural worlds to match and explain empirical data. In other words, "all models are wrong, but some are useful". This is exactly the understanding of science epistemological fictionalism would suggest, if perhaps in different terms. According to fictionalism, scientific beliefs are beliefs in certain kinds of arrangements of fictional elements, ones that can comprehensively account for available evidence in a systematic and economical way, constituting working models of a postulated external and mind-independent reality that is the cause of our empirical data. And this metaphysically monist postulation is itself justified by the theoretically economical quality of the models that rely on it as compared to those possible on the basis of a metaphysically dualist or pluralist assumption, or metaphysical solipsism.

Another assumption it is practically necessary for us to make in the context of science is that we can secure objectivity or intersubjectivity. From our skeptical, epistemically solipsist starting point, this possibility is impossible to verify, but we must nevertheless proceed *as if* it is possible – that is, make use of the assumption as a crucially useful fiction for doing science.

From the virtualist point of view, it is reasonable to believe that we, being essentially biological machines, can generate the same computational products as each other, at least in principle. In this way, *everything* we can experience is objective in the way that mathematics is. This is more obviously reasonable to assume with regard to the simpler, more clearly defined or intuitively more easily accessible experiences, but no sharp distinction can be drawn in the realm of virtuality, so the virtualist has to grant the theoretical possibility that other brains can think, imagine, perceive or dream in exactly the same way as he does. But the only way we have to tentatively confirm objectivity, at least at this point in our history, is by means of communication. In practice, this is what sets the limits for what experiences and mental constructions we call objective: Only those above some arbitrarily set threshold of communicability.

Rather mysteriously, the scientific approach to explanation works far better than what we have epistemological reason to expect. From the strictly skeptical point of view, we have no reason to expect experiential reality to be as orderly as our

incredibly precise working scientific hypotheses have shown it to be. This is, of course, a profoundly welcome surprise, as Nietzsche emphatically expresses in *The Gay Science*:

Our amazement. – It is a deep and fundamental stroke of luck that science discovers things that *stand up* under examination and that furnish the basis, again and again, for further discoveries – after all it could be otherwise! Indeed, we are so convinced of the uncertainty and the fantastical quality of our judgments and of the eternal change of human laws and concepts that it actually amazes us *how well* the results of science stand up! Formerly, one knew nothing of the changeableness of everything human; the habit of attachment to customary morality (*Sitte der Sittlichkeit*) sustained the faith that the entire inner life of humanity was fastened to iron necessity with eternal clamps; perhaps people then experienced a similar voluptuous amazement when they told each other stories and fairy tales. The miraculous did a lot of good to those who at times grew weary of the rule and of eternity. To lose firm ground for once! To float! To err! To be mad! – that was part of the paradise and debauchery of former ages, whereas our bliss is like that of the shipwrecked man who has climbed ashore and is standing with both feet on the firm old earth – marvelling because it does not bob up and down. (2008: 59-60)

In fundamental philosophy, one cannot begin by assuming the existence of an external reality without belying the subject matter. But less strict fields of theoretical activity only need to have their imagined worlds be *workspaces*, practical and expedient to their purposes. No theoretical endeavor beside philosophy has a strong requirement for a deeper understanding of the nature of speculative thought and its relation to reality. These other endeavors have historically been able to carry on just fine without much epistemological insight, or based on unfounded assumptions about their own work, and most of them will be able to carry on without input from philosophy. Their worlds need not be founded on anything remotely close to the completely satisfying grounds philosophers aim for (and fail to arrive at). Worlds are like canvases that can be used instrumentally without reflection on the nature of this activity or the material involved. But of course, epistemological insight is, in most cases, helpful rather than a hindrance for such activity, to avoid reification or superstition and the problems inherent to these fallacious attitudes.

Contrary to Kant's conception of empirical realism, the epistemological fictionalist cannot see any limits to science but, in a sense, the limits of our imagination: As we

develop our mathematical imagination to new heights of complexity, physics, being applied mathematics, can be expected to be able to describe its empirical data in new, better and more economical ways. As to the question of whether or not science can be completed: We simply cannot know, even in principle, because, as discussed, even if we were to achieve this feat, we would have no way of verifying the completeness or truth of our theories.

But the scientific conception of the world, however useful and impressive, does in the end stand on even ground with other areas of culture: "Sense, history, science, and poetry are all in the same case: they arrest essences, exclamatory visions, and apply them as names to the flux of nature, which they can neither fathom nor arrest" (Santayana, 1942: 110). The other major cultural product I will consider here is religion. And it, too, must be framed in fictionalist terms, even though this is contrary to the superstitious insistence of most religious people that it is true revelation. As I will define it for the purposes of this discussion, religion is to be understood as merely presenting a view we can immerse ourselves in for emotional or existential benefits, like encouragement or a comforting feeling of belonging. Viewed this way, science and religion do not conflict, because the purposes they are designed for are entirely separate. If, however, a religious person claims that his religion gives a plausible explanatory model of experiential reality, he puts it in direct competition with science, a competition any intellectually honest judge would rule in favor of the latter, due to the unaccountably magical nature of religious constructions and its lack of logical consistency. But religion does not necessarily involve this claim. Fictionalist religion of the kind I have outlined does not, and is therefore fully compatible with science, in the compartmentalist sense.

The worlds produced by fictionalist religion may have to be empirically down to earth (as that is most often what is intuitively appealing), but there is no claim to having a better model of experiential reality than science. Religious worlds are purely imaginary, bound only by the uses we have for them. The words of F.A. Lange, as quoted by Vaihinger in *The Philosophy of 'As if'* are appropriate:

"we should create for ourselves in imagination a fairer and more perfect world", and thereby "idealize life". "If this principle is once conceded, we shall

be compelled to allow its value to myth – as myth" ("even the unbeliever" can, in this sense, "make the ideal image of Christ his own"). But it is more important that we shall rise to the recognition that it is the same necessity, the same . . . root of our human nature, which supplies us through the senses with the idea of the world of reality and which leads us, in the exercise of our highest creative and synthetic powers, to fashion a world of the ideal, in which to take refuge from the limitation of the senses, and in which to find again the true Home of our Spirit." (2009: 330)

Most of the anti-religious arguments presented throughout the ages, which have been perhaps most clearly stated by the "new atheists" movement of the present day, have no application to religion fictionalistically understood. As Santayana correctly observes:

There are two stages in the criticism of myth, or dramatic fancy, or the sort of idealism that sees purposes and intentions and providential meanings in everything. The first stage treats them angrily as superstitions; the second treats them smilingly as poetry. (1955: 247)

Believing in the methods and results of science only excludes us from belief in alternative views and practices *aimed at the same goal*, and neither religion or metaphysics does that – or rather, they don't necessarily do that, and certainly should refrain from attempting it, unless of course their products are able to surpass those of empirical science in expediency.

With regard to the question of how to choose what compartment to enter into when – that is, what aims we should pursue – I cannot see any way to avoid the appeal to individual intuition. There is no third person vantage point from which we can make the judgment, except of course of the fictionalist sort, which by definition itself is a compartment or arbitrary frame we would have to enter into, on the basis of our individual inclination. In other words, we cannot avoid the burden of a fundamental personal responsibility for our lives and the worlds we choose to live in.

Metaphysics and the justification for virtualism

Metaphysics, as I understand and use this ambiguous term, is speculative constructions beyond the reach of empirical science that aims to describe the fundamental structures of reality or our cognitive access to it. The number of

different possible metaphysics is immeasurably large, and each particular one is difficult to precisely distinguish from each other, due to overlapping claims. What I have called ontic solipsism can somewhat unproblematically be separated as one example, scientific realism as another – virtualism is the one I will defend.

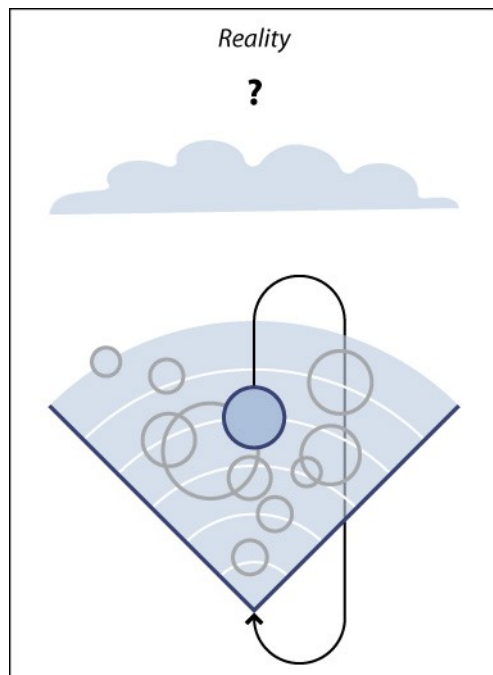
Metaphysical theories are not mutually exclusive, unless their aims are precisely the same and they differ greatly in their success. The fictionalist can adhere to several different metaphysical theories, simultaneously or alternatingly, if he finds them convincing. For instance, he can simultaneously be committed to both the core claim of virtualism and a broader scientific realism, and then alternate into a completely different view, for instance a religious view based on ontic solipsism. The arguments for each metaphysical theory are made separately. So what are the arguments for virtualism? When and why should we use it?

Virtualism can serve more than one purpose, and every purpose to which it is expedient is a valid point in justifying belief in it. One of its most important functions is this: as an attempt to integrate what emerges from epistemology as the fundamental limitations of cognition (i.e., skepticism, fictionalism) with what has emerged from physical science as the fundamental structure of reality (matter and forces). The epistemological fictionalist cannot say anything about reality, and the physicist cannot (at least not yet) say anything sensible about the nature of the mind and its presumably physical production. Virtualism makes an adaptation of these two views to each other possible, resulting in a dualist worldview where real, mind-independent substances (bodies, brains) are postulated that are able to somehow use the laws of nature to compute and render experience and consciousness, as purely virtual products the content of which has no direct connection with reality. As I will explain in part two, virtualism can be used to support other ontological views than this one, but the dualist compromise between hard empirical science and strict epistemology is its most independent contribution.

Any ontological theory is inherently speculative, i.e., just another compartment among compartments. The most virtualism can possibly aspire to with the dualist ontology introduced above is for it to be suitable fundamental working hypothesis

for certain purposes, like for instance those of philosophers, consciousness scientists and most social sciences.

The full range of thinkers and actors in the world has use for epistemological carefulness, so as not to fall prey to superstition. For them, virtualism can serve as a helpful introduction to epistemological fictionalism. For others, such as psychologists, it is more directly useful, as a basic model of how the mind works, onto which they can add layers of further assumptions, e.g. about which mental practices are good for us and which are harmful. Consciousness scientists generally have extensive use for it, in much the same way as psychologists, but with much greater promise of scientific progress, as will be discussed in more depth in the second part of this essay.



If the brain is a virtual reality engine, and experience is what is being rendered by it, then we have no direct contact with reality, and cannot know that anything is true. We have to understand all we experience, think and imagine as being untrue, or fictional. In this way virtualism leads back to epistemological fictionalism. This seems self-undermining, since according to epistemological fictionalism, virtualism is just another fictional construction among infinitely many other possible ones. If true, virtualism must be a fiction! This self-contradiction is the most challenging objection that can be raised against it. But virtualism does

not have to be true in order to be justified, as no fictionalistically understood view does. Far from being a flaw, the fact that virtualism leads to or involves global epistemological fictionalism and skepticism can be used as an argument in favor of it. In the completely open field of non-committing epistemological fictionalism, a view that reiterates and thus confirms this basis is more attractive than one that closes itself off as true.

Virtualism is incoherent on anti-fictionalist (i.e., epistemologically realist) terms, but for the fictionalist, it is no more incoherent than any other view. Nothing can be seen as more than useful fictions, and virtualism, in contrast to the vast majority of other propositions we have for our consideration, *acknowledges* this fact. The fact that virtualism precludes the possibility of its own verification is simply confirming a matter of fact the fictionalist is already aware of.

The virtualist and the epistemological fictionalist both concur with Santayana in saying:

the scepticism I am defending is not meant to be merely provisional; its just conclusions will remain fixed, to remind me perpetually that all alleged knowledge of matters of fact is faith only, and that an existing world, whatever form it may choose to wear, is intrinsically a questionable and arbitrary thing. (1955: 49)

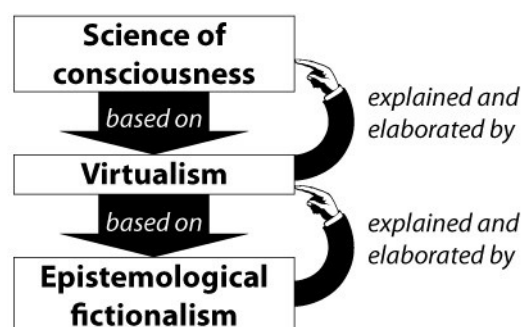
But of course, the fact that virtualism reiterates fictionalism and skepticism is not enough to justify belief in it. What makes virtualism particularly attractive is that it provides a scientifically plausible explanation for why our cognitive limitations are so severe; why we find ourselves unable to breach the confines of epistemic solipsism. And it enables us to expand on epistemological and related issues with a much richer and more accessible terminology, based on the analogy between mind and the computer generated virtuality with which most of us are familiar.

As already mentioned, virtualism presupposes some basic form of scientific realism. The broad lines of the story science tells us about ourselves are assumed to be true (in the fictionalistic sense, of course): The virtualist assumes we are evolved creatures in a tiny corner of an incredibly vast physical universe. This does not preclude us from entering into alternative beliefs, even ones that directly conflict with scientific realism, perhaps by postulating some active deity with which we can have a personal relationship. As long as any such belief is securely framed in fictionalist terms, there is no reason why we should forbid ourselves entering into it, even if that means our virtualism is temporarily suspended. Virtualism is not foundational and universal in this sense; it can be suspended and taken up again as we please. Epistemological

fictionalism, on the other hand, should always be present, even if only in the back of one's mind.

Virtualism aims to provide a "grand unified perspective", a framework for understanding strict philosophy, the hard empirical science of the present day, and everything in between. Furthermore, as a speculative elaboration on epistemological fictionalism, it aims to inform us about every mental and cultural activity, what their grounds are, how far each of them can hope to reach, what claims they can assert and how strongly, etc. In short, it is a general theoretical framework (but still not fundamental in the sense epistemological fictionalism is). The relation of virtualism to science is such that if the latter undergoes a revolution and starts seeing things a completely different way, virtualism might very well become obsolete. Another theory would then have to be proposed to provide a better, more adapted connection. But at least for now, I think virtualism is eminently plausible.

Just like virtualism can help to explain and elaborate on epistemological fictionalism, the science of consciousness can help to explain and elaborate virtualism. And just like virtualism rests on epistemological fictionalism as its foundation, the science of consciousness rests on virtualism – or rather, it *should*, as forcefully argued by Antti Revonsuo in *Inner Presence: Consciousness as a Biological Phenomenon* (2006) – though what I call virtualism is framed by him in entirely different terms.



Arguments for believing in virtualism, being half-empirical metaphysics, must be drawn from both below and above, and since the foundational reasons are, as I have described, very thin, the arguments from above are all the more important. It is however not within my purview to explore the scientific side of the justification of

virtualism. Revonsuo (2006) and Metzinger (2009) both provide extensive arguments of this kind, some of which I will touch upon in the next part of this essay.

Part II: Virtualism

In the previous part, my aim was to provide virtualism with the philosophical side of its justification, and above all to show that it is not an incoherent position. This led me to propose a way to found thought in general in radical skepticism, namely by a fictionalist turn in epistemology. As I tried to demonstrate, this provides us with the strictest possible starting point, and, *at the same time*, the greatest possible freedom for thought. It does not enable us to provide virtualism with a philosophical justification that is sufficient on its own, but it does allow us to escape the objection that it is self-undermining. Its justification beyond strictly logical coherence is a matter for empirical science, which falls outside the scope of this essay.

In this part, I will explain in detail what virtualism means and explore some of its wide-ranging philosophical consequences. I will touch on a few examples of empirical evidence in favor of the theory, but my focus is for the most part purely philosophical. The scientific side of its justification is simply assumed for the sake of argument.

Before I start, a few remarks on the choice of the term "virtualism" and its relation to realism. First, as I have mentioned, the theory rests on at least a minimal scientific realism. Second, it involves ontological realism about virtuality, in the sense that it claims assertions about virtuality, without reference to an external reality, has an objective, determinate truth-value (more on this later on). According to Chalmers (2009: 16), such a claim is sufficient to classify the theory as realism. We have several reasons, then, to associate virtualism with realism. Instead of "virtualism", it could perhaps be called "virtual realism" or "realism of virtuality", just as Plato's idealism can instead be called "Platonic realism". Or, as Revonsuo suggests, it could be identified with "representational realism" (2006: 121). But essential to virtualism is the distinction between virtuality and reality, where our direct access to the latter is denied. Mixing in the term realism in its name would either invite unnecessary confusion or necessitate a few different terminological choices. I prefer to avoid using

the term realism, but this is no more than an arbitrary question of terminology. The same issues can be explored in very different terms.

Dreaming machines telepresent in the real world

As stated several times, the basic claim of virtualism is that the world of experience is a virtual reality generated somehow by the brain. But why should we call this experiential reality a *virtual* one? In *Inner Presence*, Antti Revonsuo makes the case by way of investigating the dreaming brain as a model system for understanding consciousness. His direct answer to the question:

As far as we know anything at all about dreaming and its neuropsychological basis, we know that all the biological processes that somehow generate the dream experience are occurring inside the brain. Hence, the dream world can be regarded as "virtual" for the following reasons. The dream world, though compelling, does not exist anywhere in the reality outside of the brain. During dreaming, the dreamer is immersed in a seemingly real perceptual world; she has the fully convincing experience of being physically present in it. Nevertheless, her physical body is actually present in a quite different physical environment. The dream world is thus "virtual" for precisely the same reason as a computer-generated synthetic environment is: in both cases I feel physically present (i.e., I *am* phenomenologically present!) in an unreal place where my physical body is not really present at all. (2006: 114)

One could argue that the dreaming brain is unfit as a model system for the study of consciousness in general, as *real* consciousness requires something not present in dreaming, like empirical content that for some reason can only be acquired by the senses, or a level of awareness only reached when awake. But Revonsuo dismisses both of these objections. The first because, as he shows, we have "considerable empirical support" for the statement that the full range of qualitative phenomenal content can be generated by the dreaming brain (2006: 82), even if not with as much regularity as in waking consciousness. And the second objection is dismissed by reference to the possibility of reaching a waking level of awareness while still dreaming – the phenomenon called *lucid dreaming*. The latter is particularly interesting, as rather than diminishing the sense of realism of the dream, it makes the phenomenal illusion even *more* convincing: "Though the dreamer knows for a fact that it is only a dream, she may find it ever harder to believe that the spatially

extended world all around her is actually somewhere in her own mind (or brain)" (2006: 83).

About 1 to 10% of dreams are lucid. In all the rest, "the dream world is taken for real by the dreamer", only later to be labeled as unreal – that is, upon awakening (2006: 83). In this retrospective view of the dream, its content is usually labeled as mere representations of things we believe ourselves to *actually* experience in waking life. But this is a false distinction. What our waking experience presents us with is no less unreal and representational than dreamt phenomenal content. In fact, the naive realist's assumption that waking experience is real is just a variation of the dreamer's naive assumption that his dream world is real:

The fact is that in both cases we have similar representations of a "world" or a "reality," but in everyday waking perception we take the representation for the real thing. We have the naive realist stance in everyday waking perception, for we regard the mere representation of reality as the external physical reality itself. Thus, when there is a similar representation created in the brain during dreaming, we cannot help but call it a "reality" as well, although we do realize (retrospectively, though) that the phenomenal reality in that case does not represent any external state of affairs. (Revonsuo, 2006: 105)

Revonsuo later gives the following bold summary:

All the phenomenal worlds we enjoy – whether those of dreams, computer-generated models, or waking "reality" – are basically the same; the realities we experience are always "simulated" or "virtual," as is our experienced sense of presence within them (2006: 116)

Waking experience is, in a very literal sense, a dreaming state of mind, distinguished only by the fact that it is modulated by input from our senses, as explicitly suggested by the neuroscientist Rodolfo Llinás (2002: 2), who also takes this to its dramatic conclusion, by pronouncing us "dreaming machines by nature!" (2002: 259).

But of course, the fact that our capacity for virtual reality generation is modulated by sense data in waking experience is a very significant difference. The point of juxtaposing dreaming and waking is only ontological: The phenomenal material of both kinds of experience is the same, the difference is only the ways in which it is being used. "When dreaming, as we are released from the tyranny of our sensory

input, the system generates intrinsic storms that create 'possible' worlds" (Llinás, 2002: 2). In contrast, our waking state seems to be causally determined by sense data to a great extent. Revonsuo frames this state of mind in terms of "telepresence" – that is, technology allowing one to feel as if present somewhere else than where one really is, for instance by means of audio-visual and perhaps even tactile feedback systems. Revonsuo's claim is that this is a perfect analogy for the relation between experiential reality and the true reality external and transcendent to it. This counterintuitive perspective is presented through a clever thought experiment. Revonsuo asks us to imagine being an astronaut exploring a strange world with no visible light, no audible sound, nothing at all that our senses can work with.

You feel like floating in a sensory-deprivation tank, unable even to perceive the position of your body, let alone the environment you are surrounded by. Somehow you manage to return to the mother ship. You examine carefully all the data that were collected from the planet's surface. You find out that actually there is a lot of physical activity going on but of a kind you have never encountered before. Consequently, you were not able to perceive anything. Well, you do not give up – you design a suit that has sensors for the alien radiations and vibrations on the planet, translating them into the sort of physical stimuli that your body is able to handle. Thus, a certain sort of alien radiation is translated, by your goggles, into electromagnetic radiation of the visible wavelengths; the vibrations of the planet's strange atmosphere are translated into vibrations of air near your ears, and so on. When you return to the planet, you step into a quite different, spatial and extended world of objects, colors, and sounds. Now your brain can construct an experienced model of the world, which enables you to successfully interact with the world. Of course, the world in itself is still silent and dark, just physical matter and energy hurrying about, but nevertheless, your brain is now clothing it (its model, that is) with properties that do not really exist out there. The phenomenal level of organization is, thus, an illusion created by the brain, but still, a most useful one for an organism that must find its way around. (2006: 117)

As he goes on to explain, this strange planet is the Earth, the space suit is your sensory systems,

the "translations" of alien physical signals into familiar ones is the transmutation from external physical stimuli first into internal neural firings and then into internal phenomenal features at the phenomenal level; and the useful out-of-brain illusion somehow created inside the brain is the thing we ordinarily call "reality"; the simulation of the world with the self as the central actor. "Reality" is only the fully immersive "world simulation" that creates the telepresence experience constrained by current sensory input. (117)

This analogy is superbly apt, except, as Llinás would object: "Because the brain operates for the most part as a closed system, it must be regarded as a reality emulator rather than a simple translator" (2002: 13). The capacity of our brain to generate consciously experienced virtual reality is being used to simulate an external reality – or rather, to assemble from what is essentially fictional dream material a model that works as well as possible. When we see trees, houses and people in our waking state of mind, what we see are completely virtual objects, dream things that happen to be rendered by our brain in just the right place and just the right way for our real bodies to be able to navigate our real environment with minimal difficulty and effort. Under normal circumstances there is no sign at all of *glitches* in this rendering that would make us suspect that our experiential world is not the external reality itself. The reality rendering of our brains is usually completely invisible to our minds. The astonishingly high level of evolutionary optimization of our brains have made it extremely difficult for us to lift the veil of illusion.

The global model of reality constructed by our brain is updated at such great speed and with such reliability that we generally do not experience it as a model. For us, phenomenal reality is not a simulational space constructed by our brains; in a direct and experientially untranscendable manner, it is the world we live in. (Metzinger, 2009: 107)

On the evolutionary explanation

Berkeley was right that sensations are ideas, but his explanation of their superior clarity and realism to that of imagined ideas, namely that sensation is partaking in the ideas of God, is obviously not a viable one. So how can it be explained? Philosophers should not be ashamed to pass questions like this one on to the empirical sciences, even if this means we are left with the philosophically unsatisfying answer "because we're wired that way". Further inquiries into why and how exactly are the topics of evolutionary biology and neuroscience respectively, and the only tasks for philosophy here are prior to and after the work of science is done – i.e., critique of its underlying assumptions and speculative elaboration on the basis of scientific results and theories.

The practically universally held theoretical framework scientists employ in explaining how we have become the beings we find ourselves to be, and thus also the reason why we are wired the way we are, is the theory of evolution. The fact that waking experience is so perfectly realistic that our natural condition is one of utter ignorance of its virtual nature is explained simply by reference to the evolutionary mechanism. The same goes for our equally transparent self-model, by which is meant the feeling of being a self and possessing a body (a topic that will be explored in greater detail in a later chapter):

The self-model activated in the human brain has been optimized over millions of years. The process that constructs it is fast, reliable, and has a much higher resolution than any of today's virtual-reality games. As a result, the virtuality of the phenomenal self-model tends to be invisible to its user. But strictly speaking, it is simply the best hypothesis the system has about its own current state (Metzinger, 2009: 108)

Berkeley thought of empirical phenomena as signs delivered to us by God rather than as effects produced by things themselves. And again, he is partly right, except we have no scientific reason to believe that it is God who delivers the signs to us – science casts our brains for this role. The "wisdom" inherent in the signs delivered to us in experience is merely one of evolutionary adaptation – in a sense, it is *our* wisdom, although beyond our conscious control, and even, at least so far, beyond our analytical grasp.

A crucial point in this context is the fact that evolutionary pressure not only optimizes for precision, but also for comfort. In other words, part of the wisdom inherent in the way the world appears to us is that it *falsifies* the world for us, to make it palatable, endurable – in a word, to make it human. Our brain has to make the world we live in seem like a good, homelike place to be, because if it had not, humankind would long since have given up on life. This gives inquiring minds good reason to be suspicious of the world as presented, to not take appearances on their word – but on the other hand, and I think this is critical in the long run: we have to recognize and appreciate the vital importance of this benign falsification of the world. Philosophers and scientists should continue to do their best to look behind the veils, but it is just as important that we investigate how they work, how they can be manipulated, how they can be tweaked and updated to a high level of expediency

even in our alienating present and future circumstances, so far removed from those of our ancestors for which our experiential capacity was originally optimized. Philosophy must not only be an unveiler, but also a conservator and purveyor of veils – of vital falsehoods. In other words, it is critical that we take up the religious project despite having gained awareness of its nature as fiction and mind trickery. This important topic will be discussed further in the essay's final and most speculative chapter.

The hard problem

The naturalist approach to reality has, due to its objectification of experiential reality, a blind spot when it comes to the problem of consciousness, as Erwin Schrödinger keenly observes in his book *Mind and Matter*:

The reason why our sentient, percipient and thinking ego is met nowhere within our scientific world picture can easily be indicated in seven words: because it is itself that world picture. It is identical with the whole and therefore cannot be contained in it as part of it. (1958: 52)

Both the fundamental philosophical attitude presented in part one and the virtualist perspective here under consideration can inform us as to how to deal with the hard problem of consciousness. They cannot provide a solution, but present a reason to reframe it as a strictly empirical question. As I have argued, philosophy should not presuppose an external reality to which it gives theoretical primacy. Instead, it should be firmly rooted in the fictional or virtual realm of the conscious subject. The hard problem from the philosophical point of view is not how consciousness can emerge from physical reality, but the epistemological question of how the existence of this reality can be determined. The hard problem of consciousness is thus left entirely to empirical science.

Of course, the metaphysical position of virtualism can, and I believe should, inform science in the quest for a satisfactory solution to this problem, but it only figures in this project as a set of guiding fundamental assumptions – assumptions that does however present us with reasons to be optimistic: Not only does the project seem solvable in principle, as is already suggested by the reductionist ontological monism

hard empirical science is generally committed to; it seems realistic to assume, or at least hope that it is solvable in practice. Because if the mind is essentially a capacity for virtual reality generation, it should be quantifiable, and the rapid progress of virtual reality technology (by electronic means or otherwise) should give us the perfect tool to perform experiments on our own minds, and eventually even artificially *reproduce* mind and consciousness in a highly manipulable way with complete data access to all computational operations involved. If the mind is indeed a computational product, it should be possible to completely decode the activity of the brain, thereby enabling us not only to understand it, but even to directly and with complete control manipulate, enhance and augment it. These visions, which from a purely scientific point of view are strongly optimistic, can obviously not be realized any time soon, and there might very well turn out to be impassable technical obstacles on the way to get there, but we do at least have theoretical reason to hope that they can be realized.

Though of course, even if we do arrive at a perfectly working model of the mechanism of mind and how consciousness can emerge from physical events, this would by no means be a *philosophically* satisfying solution to the problem. Just as with the astonishingly precise models physicists have been able to produce: we can always ask impossible questions like *why* the wave functions described by quantum mechanics collapse with observation, *why* the forces of fundamental interaction are fixed to certain strengths, *why* the universe came into existence at the moment of the Big Bang, and so on. And even though all the questions I listed can be and has been addressed by theoretical physicists, they can only explain them in terms of further descriptive hypotheses, such as the multiverse hypothesis or the many-worlds interpretation of quantum mechanics. The same will necessarily be the case also for any scientific solution to the hard problem of consciousness. Philosophers thus return to the hard problem of epistemology. And as I have indicated from the beginning of this essay, this problem is in principle unsolvable due to the nature of mind and its relation to mind-independent reality.

The virtual self

Conscious experience [...] is an interface, an invisible, perfect internal medium allowing an organism to interact flexibly with itself. It is a control device. It functions by creating an internal user interface – an "as if" (that is, virtual) reality. It filters information, has a high bandwidth, is unambiguous and reliable, and generates a sense of presence. More importantly, it also generates a sense of self. (Metzinger, 2009: 105)

The self is "just a particular mental state, a generated abstract entity we refer to as 'I' or 'self'" (Llinás, 2002: 127). Whereas the appearance of an external world is our informational interface to reality, the bodies we perceive ourselves to possess, as well as our self-conception, are our control interface.

The brain's job is to simulate the body *for* the body and to predict the consequences of the body's movements, and the instruments it uses is the self-model. This process takes place in the real world, so it is time-consuming and necessarily generates a lag between the actual state and the self-model's content.

Normally we're unaware of this process, because nature engineered it so efficiently that errors rarely occur. But the simple fact remains: You are never in direct contact with your own body. What you feel in the rubber-hand illusion [...] is exactly the same as what you feel when you attend to the sensation of your hands holding this book right now, or to the feeling of pressure and resistance when you lean back in your chair. What you experience is not reality but virtual reality, a possibility. Strictly speaking, and on the level of conscious experience alone, you live your life in a virtual body and not in a real one. (Metzinger, 2009: 114)

The rubber hand illusion Metzinger refers to is experienced by test subjects when they see a rubber hand on a table in front of them being stroked by a brush while their real hand, hidden behind a screen on the table, is synchronously being stroked in exactly the same way. This makes tactile and visual feedback conflict, and in most test subjects the latter overrides the former after a short period of time, giving rise to the experience that the location of their hand switches from where their real hand actually is to where the rubber hand is placed. The rubber hand is phenomenally possessed as one's own (Botvinick and Cohen, 1998). This very local out-of-body experience shows that one's concrete and material sense of self can be detached and transferred from our actual body to an artificial other. A recent experiment with immersive VR technology confirms this conclusion and takes it a lot further, by

successfully transferring the sense of whole body ownership of men in their mid-20s to a completely virtual representation of a ten year old girl (Slater, Spanlang, Sanchez-Vives and Blanke, 2010). In my opinion, experiments like these are the most compelling empirical evidence yet in support of the virtualist hypothesis.

The homunculus objection

Superficially, looking inside our virtual representations of ourselves or others for a causal explanation of perception is missing the point. But there is a deeper point to be found here: we really have nowhere else to look than in our virtual representations. When we scan or dissect brains in our scientific search for an understanding of mind or perception, what we find can never truly be mind-independent and external, as discussed. We can only find new layers of *simulated* reality. So in a sense, we do have homunculi – that is, beings ascribed causal relevance in our perception. But these are only scientifically postulated beings, useful models in our effort to create economical and explanatory models of experiential reality. Our virtual selves are not homunculi in the philosophical sense. There is no danger of falling into eternal regress of ever littler men inside our self-representations, because we were never externally related to the objects of perception in the first place: "Individual virtual objects are *parts of our being*; we are *not externally related* to virtual objects, but, rather, *our subjectivity is constituted by them*" (Revonsuo, 2006: 129).

Our homunculi and the world we in scientific speculation suppose them to perceive are, in the stricter, philosophical perspective, in one and the same ontological realm – the virtual. The standard homunculus objection rests on a confusion of the scientific and philosophical points of view, a confusion of speculative postulation with the epistemologically fundamental.

The virtual self is *the transparent surrogate of the biological organism itself* (usually located in the center of the world simulation at the phenomenal level). The virtual self is nothing more than another complex bundle of phenomenal features, in particular, ones that form the body image in the center of phenomenal space. This bundle is not special in any fundamental way: it does not carry out acts of awareness toward mental (of physical) objects, its relation to the other virtual objects that are present is not constitutive of those objects being phenomenally experienced. *The virtual self is simply one organized bundle*

of phenomenality among others, and were it to disappear (as sometimes happens in dreams and out-of-body experiences) the rest of the virtual world would continue to be present for the subject (i.e. it would continue to constitute the subjective virtual world) as if nothing special would have happened. (Revonsuo, 2006: 132)

The transcendental subject

A self-presenting state need not be presented to any subject or homunculus; therefore, we should get rid of the existence of the mysterious "subject" of experience altogether. Experience is *subjective*, but it is not presented *to* some intangible entity, the mythical *subject*, that would be external to the experience itself but somehow internal to the mind or brain of the individual. (Revonsuo, 2006: 131)

Resorting to this kind of adjectival definition of experience for fear that a noun would indicate excessive ontological commitment is only one terminological strategy for philosophical clarity. Another, and to my mind, more useful one is Kant's concept of a transcendental subject: The nondescript perceiver of perception and thinker of thoughts. Von Glasersfeld introduces this concept indirectly by quoting Wittgenstein:

The I occurs in philosophy through the fact that the 'world is my world'. . . The philosophical I is not the man, not the human body or the human soul of which psychology treats, but the metaphysical subject, the limit – not a part of the world. (2002: 122, quote is from *Tractatus* paragraph 5.641)

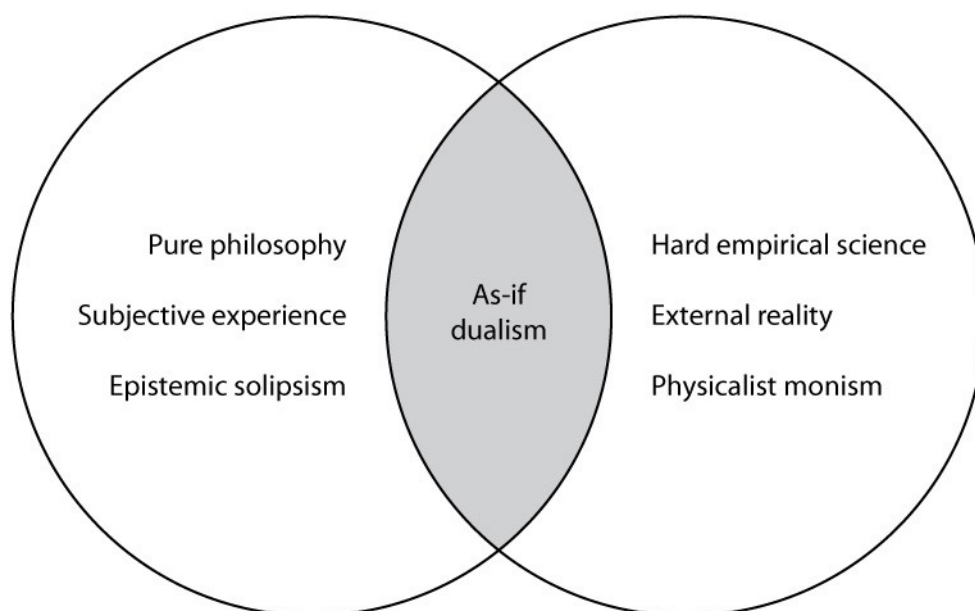
From which he continues:

In the constructivist view, the self we conceive, as well as its body, are necessarily the product of that active agent that Wittgenstein called the 'I' that is not part of the world. Whatever the other-worldly part of the self builds up is gauged according to its viability in experience. Thus there is a rather straightforward way to approach the component of the self-concept that *is* part of the experiential world. Instead of asking what the self is in the philosopher's sense, one can ask how we experience our self. This does not concern the mysterious entity that does the experiencing, but focuses on the tangible structure, the body that is experienced as one's own. Such an investigation takes the mysterious self-conscious entity for granted and proceeds to examine how that entity comes to recognize itself both as agent and as percept distinguished from the rest of its experiential field. (2002: 123)

This is not only in keeping with virtualism, but must be supposed even from the strictly skeptical point of view argued in part one to be philosophically fundamental.

Ontology and the concept of truth

Virtualism can be made to support three different kinds of ontological commitments. For the purposes of hard empirical science, virtualism can assent to its generally assumed commitment to physicalist monism, according to which the nature of the mind must be studied as a computational product of the brain, i.e., an emergent property of purely physical events, to which it can in principle be reduced to. For the purposes of pure philosophy (as I define this flexible term), virtualism assents to epistemically solipsist monism, according to which whatever reality appears to manifest itself as is entirely arbitrary. This conclusion is supported by the basic tenet of virtualism that we only have direct epistemic access to the virtual realm, from which it follows that any postulation of an external, mind-independent reality must be viewed as just that, a postulation. The third ontological position or range of positions, which I call as-if dualism, emerges from a compromise of the two extremes: At least a minimal scientific realism is supposed, but the domain of reality is strictly separated from the domain of virtuality.



No anti-fictionalist could consistently be committed to more than one ontology. But as explained in part one, virtualism is necessarily epistemologically fictionalist. Its ontological commitments are never final, never supposed to be true in the epistemological realist sense. The different ontologies would still conflict if asserted in the same context, but their contexts are completely separate. Compartmentalism of ontology is unproblematic given epistemological fictionalism.

In the context of either of the two monisms, the role of virtualism is limited to providing supportive assumptions. As-if dualism, however, is an independent and original proposal. It constitutes a range of attempts to reach a compromise between the two sides, based on virtualism. This is the principal concern of the following discussion.

The spectrum of as-if dualism

The question of whether we can bridge the gap between empirical science and philosophy is a variation of the question of whether we can bridge the gap between mind-independent reality and the mental realm – that is, to solve either of the two hard problems I distinguished earlier. As-if dualism is not proposed as a solution to these problems, it is merely a speculative construct half-way from either side. It aims at presenting worldviews expedient to everything in between pure philosophy and hard empirical science.

On the one hand, we have a virtual reality we in our scientific effort have shaped to be a plausible model of a reality external to the virtual realm of the mind. On the other hand, we have the external reality itself. Admittedly, the latter is ultimately unknowable, but in as-if dualism we nevertheless suppose it to exist and that it has certain content – minimally, bodies that contain computational structures able to generate the forms of virtuality we experience as our phenomenal worlds as well as the conscious experience of being the experiencer of this content. Furthermore, our brains are assumed to be well designed: although our minds are denied the possibility of having true insight into reality, they are generally helpful and trustworthy in the way they construct experiential and speculative worlds and tools to deal with living. Taken to its maximal extreme, we can in as-if dualism assume that

our scientific representation of reality is very precise – that it is true, although of course only in the fictionalist sense. At least the broad outlines of mind-independent reality is then thought to be structurally identical to our best representational models. This correspondence remains an unverifiable one, but is nevertheless speculatively assumed.

As a compromise between hard empirical science and skeptical philosophy, as-if dualism aspires to be both scientifically and philosophically palatable. But of course, it is in the end just a speculative theory, and the question of whether to adopt it or not is entirely up to the interests and purposes of the individual. The extent to which the nature of reality is presumed, for instance, is a question of the balance of epistemological versus scientific interest of the inquirer.

A very strict epistemologist would reject any dualism as inconsistent, and the virtualist would agree that, on his terms, it is. If the problem of epistemology is one's exclusive concern, as-if dualism is misleading and should not be maintained. In fact, this epistemologist would be advised to abandon virtualist assumptions altogether and focus instead on its epistemologically fictionalist foundation. Similarly, a physicist would reject dualism as explanatorily superfluous, an intolerable doubling of reality. The separation of the virtual domain from the domain of external reality is not expedient to his purposes, and he would be advised to stick with physicalism. But not every kind of empirical science is best served by physicalist monism, nor is every kind of philosophical inquiry best served by epistemological solipsism. Most social sciences benefit much more from as-if dualism at some speculative level. For instance, psychology and sociology both profit greatly from the virtualist assumption that our experiential worlds are wholly subjective constructs, but taking this view to the epistemologically solipsist extreme would present an unsurmountable obstacle to scientific progress rather than be of any help. Both fields must presuppose some form of realism to escape having to face fundamental doubts at every turn.

Logical contradiction cannot be avoided when attempting to speak of reality, and no theory, metaphysical or scientific, should try to patch up or hide these kinds of fundamental contradictions. They are simply unavoidable features of reified speculative thought. And *some* sort of reification (preferably fictionalistic) is

indispensable for any theoretical development beyond the closed sphere of epistemic solipsism.

Two concepts of truth

Regardless of our essentially arbitrary ontological commitments, we can with virtualism distinguish two separate concepts of truth: virtual and real.

Even though truth in the sense of correspondence with transcendent reality is impossible, there is another kind of correspondence that is perfectly attainable, namely correspondence between arrangements *within*, or immanent to, the field of fictionality or ideality. If the mind can create virtual structure as it pleases, it can certainly model and by that comprehend anything that is of similarly artificial origin. A fiction corresponds perfectly with itself, and is in this sense true. If we set out to fully understand a heretofore unknown fictional arrangement, virtualism assures us that this is in principle attainable, just as the opposite is the case for any attempt to understand mind-independent reality, which by definition is transcendent to our means of understanding. In other words, virtualism involves a distinction between virtual and real truths, not unlike the distinction suggested by Leibniz:

There are [...] two sorts of truths: those of reasoning and those of fact. Truths of reasoning are necessary, and their opposite is impossible; and those of fact are contingent, and their opposite is possible. (1999: section 33)

But contrary to traditional truth distinctions in the history of philosophy, the one drawn up by virtualism is not one of separate categories, but of attitudes to or aspects of one and the same experience. We have a natural inclination to interpret perceptual impressions as somehow signifying transcendent reality, but the same experience can be viewed merely phenomenally, in which case it is understood to be ideal or mental arrangements orchestrated somehow by the senses – the phenomenal world is here viewed as a virtual reality. And only when viewed this way, with all reference ties to mind-independent reality cut off, can we achieve true and objective understanding of experience. A confusion of these two attitudes or modes of interpreting experience is the source of all naive realism and all superstition. Our task is not to discern what is

of artificial origin from what is transcendently real, but to determine whether to choose to consider the experience (or claim) in terms of real or virtual truth.

If experience is indeed a computational product, it is by definition *computable*, and hence should, in principle, be replicable. Experience must be objective in the same sense that mathematics is objective, only at a level of complexity far beyond our current ability to comprehend or reproduce.

Color, sound, feeling, shape, duration etc. – neither of these have any reality beyond being ideal qualities available to the mind as theoretical construction material or as parts of a phenomenally manifest world construction. Unconsciously, we construct dreams and sense experience; consciously fiction and scientific conception. The thought that these fleeting subjective experiences are not indeterminable and forever private, but instead objective in the mathematical sense, is a comforting thought, not least because it suggests the possibility of perfect communication. In the last chapter, I will explore a speculative future scenario based directly on this suggestion.

Further speculation

In this final chapter I will explore a few topics at a further speculative distance from the core issues as presented up to this point. In these, the application of virtualism cannot guide us to any definite conclusions, but can still be very instructive.

A reintegrating perspective on culture

According to Ernst Cassirer, "The era of the great constructive programs, in which philosophy might hope to systematize and organize all knowledge, is past and gone." (1969: 19). But philosophy *can* attain a comprehensive system, just not of empirical knowledge, which is an open-ended, unpredictable question. The comprehensive system possible for philosophy must be phenomenological; the project must be one of a grand topological survey of *fiction*.

Philosophy is not a handmaiden for theology, nor for science. It cannot assist in completing either of their attempts at providing a comprehensive and absolutely exhaustive world view. But with the kind of first philosophy proposed in part one, it can provide an account of the common source material of all such speculative attempts. The dream of including everything in our culture as parts of a single, continuous world description is simply not realizable. But culture can be reinterpreted by reference to what all fields have in common: their nature as mental products. Fictionalism is a perfectly suited starting point to give an account of this. Skeptical philosophy can thus in a sense function to reintegrate culture from the disintegrated state it has been in since the Renaissance, when science, religion and philosophy started to break apart. Back then, what integrated them into a whole was Christianity, a more or less coherent all-encompassing description of reality, complete with a dramatic narrative. No such integration can be achieved again. Our situation is too complex for us to be able to construct a single universal key to unlock the secrets of all its multifarious aspects. We have to construct specialized tools for all the various niches we find use for. The only possible place to find a theoretical reintegration of our culture is in a philosophical theory of what these tools are, describing their powers and limitations. Empirical fictionalism can provide the bare bones for such a theory, and virtualism the first speculative step to flesh it out.

Conscious use of reality illusionism

We can design worlds that we resonate deeply with, that helps us be who we want to be, or instill in us such direction in the first place. The major historical religions are examples of this. But now, with a much deeper understanding of what they were doing than the prophets and priests themselves (probably) had, we should be better able to produce these beneficial effects, and with less distraction. For instance, most religions are bound within restrictions put on them by their ties to experiential or economical reality: The latter restricts religion to ideas and practices that have broad popular appeal. And the former makes religion something less like spiritual mysticism and more like a terribly unscientific theory to explain empirical phenomena. In fact, most examples we have of religions are more or less universal theories, aiming to provide us with ontology, morals, aesthetic feeling, entertainment and so on. Depth is sacrificed for width of scope. But as compartmentalists, we have

no reluctance to focus narrowly, for instance on spiritual mysticism exclusively. We can design worlds that employ all our capacity for this one purpose.

Religions, including the fictionalist sort I am proposing, have one restriction in common: available media. This is similar to the situation for storytelling: Whereas the best medium for storytelling we have found so far is arguably the cinema, the best suited for religion is still unknown, because of the unexperimenting nature of traditional religions. But if there can be holy books and holy music, it should in principle be possible to produce holy video clips or holy virtual reality environments.

The creation of all holy works is purely an aesthetic activity, religiously focused. The great disagreements in aesthetic judgment holds true for religion as well. Holiness is not an objective quality, it is subjective and highly relative. Religion is personal, because it has everything to do about you, the self or subject, and very little to do about our shared environment. – But in a completely individual religion, you are alone. Many prefer to have company in their beliefs, and choose to compromise as much as is needed to be able to form faith communities. This social concern should not be ignored in a fictionalist redesign of religion.

Religious use of our capacity for world construction and immersion – i.e., reality illusionism – cannot be monolithic. Entirely separate products and practices are needed for entirely separate purposes. Examples of products and practices I would categorize as religious aids for separate purposes:

- A "safe world", a mental or virtual panic room where one can collect one's thoughts and regain balance.
- Mental techniques that instill an advantageous outlook or encourage certain activity.
- A Jungian metaphorical map or language for understanding one's own psyche, helping one deal with personal challenges.

If the fictionalist wishes to optimize for each of these and many other purposes separately, his resulting religion would be a fragmented collection of mutually

exclusive world compartments. But since the limit for how many compartments the human mind is able to maintain separately is very low, and the religious worlds created are unbound figments of our imagination, they will tend to gravitate together, combining into larger unified compartments, optimized perhaps more for certain purposes than others, but in any case useful for more than one. As already hinted at, the major historical religions are extreme examples of such unification. Moderation in this tendency to unify is key. Too much unification, and the resulting religious world becomes watered down by compromise and weak in most desired effects. Too little unification, and the fragmented multitude of religious worlds become practically unmanageable.

Whatever worlds we choose to construct for ourselves, the virtualist assumption can give pointers to how we should go about designing them. If our experiential interface is a virtual world, we have good reason to focus on empirical research on how we are affected by different kinds of immersive VR environments, the results of which can be applied for design both of merely mentally maintained imagined worlds and for electronically supported virtual worlds. For instance, the effects produced in players of commercially available games can be studied. From this we can expect to be able to draw conclusions about what the benefits of different kinds of world design are, ones which in turn can be reapplied in more serious contexts. Commercial games present us with worlds and game mechanics that optimize for the feeling of interest and motivation to go on, in much the same way as synthetic sweets and fast food optimize for simple pleasures of taste. Our evolutionary determined liking for sweetness as found in naturally occurring fruits has been reverse engineered, and we have created these almost supernaturally sweet and tasteful food items. Similarly, what makes us tick in a more profound sense can be reverse engineered and optimized for. Commercial games are already doing this, albeit in a way that is mostly restricted to what yields financial returns. Some of the solutions landed on, can, however, be reappropriated to other purposes, such as education. In fact, one professor at the University of Indiana has experimented with organizing his course (on game design) as a game:

Class time is spent completing quests (such as presentations of games or research), fighting monsters (taking tests or quizzes), and "crafting" (writing

game-analysis papers and a video-game concept document). The 40-person class is divided into six "zones," named after influential game designers, in which students complete group tasks. (Laster, 2010)

And the results are promising: the students involved in this experiment performed a full grade better than students of the same class had before.

The equivalent in religious application would involve a game design to optimize for parameters like felt meaning or existential comfort. Games should be the perfect tool for this, since most games operate with goals, quantifies the value of actions, gives rich feedback about progress, and so on. And even if it turns out that we are currently unable to design games that feel spiritually relevant to us, games as a metaphor for a life religiously interpreted may be an exceedingly useful one, at least for people comfortable with games in the first place.

The future of humanity

Virtualism is a theory about the nature of the human mind, and given that our technological development has entirely human aims, the virtualist perspective can inform us as to what the direction of technological progress might be, in particular in the context of virtual reality technology. How is our condition evolving with the emergence of this technology? What might be the steps on the way, and the dangers we may face? What might be the endpoint of our technological evolution?

As discussed, felt realism is no more than a function of immersion; it is in no way indicative of any truly external reality. We are already able to artificially generate astonishingly realistic and immersive experiences, and have no reason to assume that the development of this technology will come to a halt any time soon. In fact, we have some reason to think that gradual progress will be able to arrive, in the end, at a *perfect* simulation of experiential reality, even if this would require a complete understanding of the workings of the conscious mind. Needless to say, venturing down this path would have far-reaching consequences:

If one considers the problems for society of mind-altering drugs, then imagine if people could realize their dreams, any dreams, by means of virtual

communication with other real or imaginary human beings. And not just via the visual system, but through *all* sensory systems. Keep in mind that the only reality that exists for us is already a virtual one — we are dreaming machines by nature! And so virtual reality can only feed on itself, with the risk that we can very easily bring about our own destruction. [...] Here is the possibility of creating a totally hedonistic state, a decadent sybaritic society rushing headlong into self-destruction and oblivion. (Llinás, 2002: 259)

Currently, the most obvious limitation of virtual reality technology is the interfaces through which the virtual worlds are presented, at least in commercially available devices: the screen, the headphones, the control interface (mouse and keyboard or some other controller). No improvements beyond these has yet gained massively popular adoption. But several attempts at improved interfaces have been developed in the last few years, such as head mounted VR displays, omnidirectional treadmills for simulated freedom of movement, tactile feedback simulation utilizing ultrasound (Hoshi, Takahashi, Nakatsuma and Shinoda, 2009), and technology for tracking the head or the full body, making it possible to use our bodies directly as control devices for interaction with virtual reality environments⁵. The ultimate technology in the far extension of these advances involves direct brain communication, cutting out all intermediaries, including even the physical body. The end result seems to be a situation where our conscious control of our bodies are suspended while our minds are having *computer-guided waking dreams*. Where our sensations under normal circumstances have a causal relation with stimulation of optic nerves in our real eyes and ears, they are in this scenario determined in the same way by computer generated input.

We have always been free to immersively enter into different belief-constituted worlds, but only to the extent that the power of our imagination is able to take us. For most people, this is not very far. The only really rich and realistic world most of us ever encounter is the empirical world, being a state of our virtual reality engine modulated by input from the senses. Virtual reality technology is essentially a fantastically powerful augmentation our imaginative ability to enter into alternative worlds. It can create stable worlds outside ourselves, that depend in no way on our memory or active consciousness. And these surrogate worlds are not necessarily

5 A good example of head tracking technology is TrackIR, developed by NaturalPoint. Their website, with video demonstrations: <http://www.naturalpoint.com/trackir/>

inferior in any way. We can still communicate and interact with real people through a virtual reality interface. We can still explore the real world, if necessary by means of telepresence: remotely connecting to live feeds from robots we can take control of. We can work and play, seek entertainment, find spiritual solace, have rich social lives, intense experiences of "feeling alive". The completion of virtual reality technology implies that we can do *anything we please*. There is reason to believe that future humans will permanently augment themselves in this way, and never leave their immersive virtual realities. It is very possible that we will make our future homes and raise our families entirely within virtual worlds, where we have total control over our environments, including the influences on our children. And we will probably want to do that to a great extent, as this level of freedom is presumably very harmful for a developing mind. The equivalent of schools in this scenario will probably have to put children in game worlds with powerful enough incentives for them to take interest in and acquire an understanding of the fact that there is a real world beyond our virtual reality capacity. They will have to learn about scarcity and death by paternalist force, since these concepts would be meaningless to a mind that has never known anything but virtuality.

This possible endpoint for human history (after which we will probably be augmented to such an extent that we can hardly be called humans any more) is nothing less than the liberation of spirit from the material world as envisioned by mystics since antiquity. But rather than being a purely good thing, as for instance the Gnostics imagined it would be, it places us in a terribly difficult situation, one for which we as evolutionary products are abysmally maladapted. Rather than being a Heaven, it could turn out to be an awfully fragile state, always on the verge of cataclysmic deterioration. It could be the most difficult obstacle humanity has ever faced.

If we do manage to overcome it, the further direction of our evolution might be the following: If, again, our brains are biological computers, it should be possible, not only in principle, but technically, to link ourselves up directly to our electronic computers, to have an immediate interface to them and thereby use them as a faculty annex to our natural capabilities: to extend our minds in a very literal sense. Not far removed from this scenario is one where everybody has their brains connected

directly to the Internet, and thus, to each other. Apart from possible technical difficulties and the moral objections we might have about it, there is nothing that in principle prohibits us from connecting directly to each others brains in such a way that minds can meld into a combined (or perhaps completely new) entity. If all of this is technically feasible in foreseeable future, it could mean that the end of globalization is a global mind, with a global self, global interests, a global will, global pains and pleasures, global boredom, enthusiasm and religious feeling. A massive mind, made up of every willing human mind on Earth as nodes in a global brain, augmented with all the computing power we have been able to build up to this future point in history. This, truly, would be God of the Earth, and we would *be* it, or in it, or part of it.

Conclusion

I hope to have made a convincing case that virtualism is philosophically justifiable, at least on the grounds of the proposed first philosophy of epistemological fictionalism. Secondly, I hope to have demonstrated that virtual reality technology is in the very least an exceedingly apt metaphor for phenomenality, one that is very useful for philosophical analysis of the mind, the self and our culture, as well as for a large number of sciences on both the harder and the softer side of the spectrum.

Doubts can be raised at several points. The most formidable one, I think, is a recurring theme in the works of Nietzsche. Here is a particularly fitting formulation, characteristically hyperbolic:

But will our philosophy [...] become a tragedy? [...] A question seems to lie heavily on our tongue and yet refuses to be uttered: whether one *could* consciously reside in untruth? or, if one were *obliged* to, whether death would not be preferable? [...] The whole of human life is sunk deeply in untruth; the individual cannot draw it up out of this well without thereby growing profoundly disillusioned about his own past, without finding his present motives, such as honour, absurd, and pouring mockery and contempt on the passions which reach out to the future and promise happiness in it. Is it true, is all that remains a mode of thought whose outcome on a personal level is despair and on a theoretical level a philosophy of destruction? (1996: 29-30)

Epistemological fictionalism, which is what I take this to be about, can certainly be deeply uncomfortable. We have a natural inclination to mistake our perceptions for reality. Being denied this, one can feel like having lost the world. As I see it, this burden of strict philosophical reflection is inescapable except through immersion and temporary forgetting. The hope is that this is enough. That human life deprived of its most natural relation to its experiential world can find enough support in fictionalist immersion to continue to thrive. In the long run, we will probably have to face serious existential challenges in both senses of that word, but we also have reason to look forward to the future, at least in this one regard: We will be introduced to "a universe of self-exploration barely imaginable today" (Metzinger, 2009: 239).

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